

Appl. No. : 10/090,421
Filed : February 28, 2002

AMENDMENTS TO THE CLAIMS

1. (canceled)
2. (Currently Amended): An outboard motor comprising an internal combustion engine having a first exhaust passage section, a housing unit adapted to be mounted on an associated watercraft, the housing unit having a second exhaust passage section, a support member mounted on the housing unit to support the engine above the housing unit, the support member defining third and fourth exhaust passage sections, the third exhaust passage section being wholly defined within the support member and communicating with the first exhaust passage section, the fourth exhaust passage section communicating with the second exhaust passage section, an exhaust unit detachably coupled with the support member and defining a fifth exhaust passage section communicating with the third and ~~forth~~ fourth exhaust passage sections, the exhaust unit, at least in part, positioned generally rearward of the support member, and at least one catalyzer disposed in the fifth exhaust passage section of the exhaust unit.
3. (original): The outboard motor as set forth in Claim 2, wherein the fifth exhaust passage section is connected with at least one of the third and fourth exhaust passage sections on a lateral side of the support member.
4. (original): The outboard motor as set forth in Claim 3, wherein the fifth exhaust passage section is connected with the third exhaust passage section on one lateral side of the support member, and the fifth exhaust passage section is connected with the fourth exhaust passage section on an opposite lateral side of the support member.
5. (Previously Presented): The outboard motor as set forth in Claim 2, wherein the exhaust unit comprises at least two separable members which are coupled with each other, and at least one of the separable members holds at least a portion of the catalyzer.

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6. (Previously Presented): The outboard motor as set forth in Claim 5, wherein the exhaust unit comprises three separable members, and one of the separable members is located between the other two of the separable members and holds at least a portion of the catalyzer.

7. (original): The outboard motor as set forth in Claim 5, wherein two of the separable members, which are positioned next to each other, together hold the catalyzer.

8. (Previously Presented): The outboard motor as set forth in Claim 2, wherein the exhaust unit holds at least two catalyzers within the fifth exhaust passage section.

9. (original): The outboard motor as set forth in Claim 8, wherein the catalyzers are disposed in series with each other.

10. (original): The outboard motor as set forth in Claim 8, wherein each catalyzer comprises a catalyst bed, and the catalyst bed of one of the catalyzers has a different chemical composition than the catalyst bed of the other catalyzer.

11. (Currently Amended): An outboard motor comprising an internal combustion engine having a first exhaust passage section, a housing unit adapted to be mounted on an associated watercraft, the housing unit having a second exhaust passage section, a support member mounted on the housing unit to support the engine above the housing unit, the support member defining third and fourth exhaust passage sections, the third exhaust passage section being wholly defined within the support member and communicating with the first exhaust passage section, the fourth exhaust passage section communicating with the second exhaust passage section, an exhaust unit detachably coupled with the support member and defining a fifth exhaust passage section communicating with the third and ~~forth~~ fourth exhaust passage sections, a space defined below a surface of the engine and above a surface of the support member, at least

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a portion of the fifth exhaust passage section extending through the space, and at least one catalyzer disposed in the fifth exhaust passage section of the exhaust unit.

12. (original): The outboard motor as set forth in Claim 11, wherein the catalyzer is configured such that at least a portion of the fifth exhaust passage section has a generally oval cross-sectional shape relative to a flow axis through the fifth exhaust passage section.

13. (Currently Amended): An outboard motor comprising an internal combustion engine having a first exhaust passage section, a housing unit adapted to be mounted on an associated watercraft, the housing unit having a second exhaust passage section, a support member mounted on the housing unit to support the engine above the housing unit, the support member defining third and fourth exhaust passage sections, the third exhaust passage section being wholly defined within the support member and communicating with the first exhaust passage section, the fourth exhaust passage section communicating with the second exhaust passage section, an exhaust unit detachably coupled with the support member and defining a fifth exhaust passage section communicating with the third and ~~forth~~ fourth exhaust passage sections, a space defined below a surface of the engine and above a surface of the support member, the fifth exhaust passage section beyond the space, and at least one catalyzer disposed in the fifth exhaust passage section of the exhaust unit.

14. (Currently Amended): An outboard motor comprising an internal combustion engine having a first exhaust passage section, a housing unit adapted to be mounted on an associated watercraft, the housing unit having a second exhaust passage section, a support member mounted on the housing unit to support the engine above the housing unit, the support member defining third and fourth exhaust passage sections, the third exhaust passage section being wholly defined within the support member and communicating with the first exhaust

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passage section, the fourth exhaust passage section communicating with the second exhaust passage section, an exhaust unit detachably coupled with the support member and defining a fifth exhaust passage section communicating with the third and ~~forth~~ fourth exhaust passage sections, the fifth exhaust passage section, at least in part, having a diameter that is greater than either a diameter of the third exhaust passage section or a diameter of the fourth exhaust passage section, and at least one catalyzer disposed in the fifth exhaust passage section of the exhaust unit.

15. (original): The outboard motor as set forth in Claim 14, wherein the catalyzer generally has a cylindrical shape.

16. (Previously Presented): The outboard motor as set forth in Claim 2, wherein the fifth exhaust passage section is positioned generally higher than the fourth exhaust passage section.

17. (Previously Presented): The outboard motor as set forth in Claim 2, wherein the exhaust unit additionally defines a coolant passage extending adjacent to at least a portion of the catalyzer.

18. (original): The outboard motor as set forth in Claim 17, wherein the coolant passage generally surrounds the catalyzer.

19. (Previously Presented): The outboard motor as set forth in Claim 2 additionally comprising at least one sensor that senses an exhaust condition, and the sensor being exposed to a portion of the fifth exhaust passage section.

20. (original): The outboard motor as set forth in Claim 19, wherein the sensor includes an air/fuel ratio sensor disposed upstream of the catalyzer.

21. (original): The outboard motor as set forth in Claim 19, wherein the sensor includes an exhaust gas temperature sensor disposed downstream of the catalyzer.

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22. (Previously Presented): The outboard motor as set forth in Claim 19, wherein the sensor has an axis extending generally parallel to an axis of an output shaft of the engine.

23. (Previously Presented): The outboard motor as set forth in Claim 19, wherein the sensor has an axis extending generally normal to an axis of an output shaft of the engine.

24. (Previously Presented): An outboard motor comprising a housing unit, an internal combustion engine disposed above the housing unit, the engine defining an internal exhaust passage, an exhaust guide member positioned between the housing unit and the engine to support the engine, the exhaust guide member defining first and second exhaust passages, the first exhaust passage communicating with the internal exhaust passage, the second exhaust passage communicating with an exhaust discharge passage defined within the housing unit, a generally C-shaped exhaust unit detachably affixed to the exhaust guide member, the exhaust unit being positioned generally rearward of the exhaust guide member, the exhaust unit defining another passage communicating with the first and second exhaust passages, the exhaust unit passage extending generally normal to an axis of an output shaft of the engine, and at least one catalyzer positioned within the exhaust unit passage.

25. (original): The outboard motor as set forth in Claim 24, wherein an outlet of the first exhaust passage and an inlet of the second exhaust passage are generally aligned along a transversely extending axis.

26. (original): The outboard motor as set forth in Claim 24, wherein at least a portion of an inlet of the first exhaust passage lies directly above an outlet of the second exhaust passage.

27. (Previously Presented): The outboard motor as set forth in Claim 24, wherein a center of an inlet of the first exhaust passage and a center of an outlet of the second exhaust

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passage extend generally parallel to the axis of the output shaft of the engine and generally parallel to each other.

28. (original): The outboard motor as set forth in Claim 24, wherein the exhaust unit comprises a plurality of conduit members which are coupled together, and at least one of the conduit members holds at least a portion of the catalyzer.

29. (original): The outboard motor as set forth in Claim 24, wherein the exhaust unit holds a plurality of catalyzers.

30. (original): The outboard motor as set forth in Claim 24, wherein at least a portion of the exhaust unit passage extends below the engine.

31. (original): The outboard motor as set forth in Claim 24, wherein a portion of the exhaust unit passage extends generally transversely and generally rearward of the engine.

32. (original): The outboard motor as set forth in Claim 31, wherein the catalyzer is disposed within the transversely extending portion of the exhaust unit passage.

33. (original): The outboard motor as set forth in Claim 24, wherein a portion of the exhaust unit passage extends generally transversely, the catalyzer is disposed within the transversely extending portion of the exhaust unit passage, and the portion of the exhaust unit passage is positioned generally higher than the second exhaust passage.

34. (original): The outboard motor as set forth in Claim 24, wherein the exhaust unit additionally defines a coolant passage extending adjacent to at least a portion of the catalyzer.

35. (original): The outboard motor as set forth in Claim 24 additionally comprising at least one sensor to sense an exhaust condition, the sensor being exposed to a portion of the exhaust unit passage.

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36. (Previously Presented): The outboard motor as set forth in Claim 5, wherein the separable members are laterally separable.

37. (Currently Amended): An outboard motor comprising an internal combustion engine having a first exhaust passage section, a housing unit adapted to be mounted on an associated watercraft, the housing unit having a second exhaust passage section, a support member mounted on the housing unit to support the engine above the housing unit, the support member having third and fourth exhaust passage sections, the third exhaust passage section directly communicating with the first exhaust passage section without any intermediate passage, the fourth exhaust passage section communicating with the second exhaust passage section, an exhaust unit detachably coupled with the support member and defining a fifth exhaust passage section communicating with the third and ~~forth~~ fourth exhaust passage sections, the exhaust unit, at least in part, positioned generally rearward of the support member, and at least one catalyzer disposed in the fifth exhaust passage section of the exhaust unit.

38. (Currently Amended): An outboard motor comprising a housing unit, an internal combustion engine disposed above the housing unit, the engine having an output shaft that extends generally vertically, the engine defining an internal exhaust passage, an exhaust guide member positioned between the housing unit and the engine to support the engine, the exhaust guide member defining first and second exhaust passages, the first exhaust passage communicating with the internal exhaust passage, the second exhaust passage communicating with an exhaust discharge passage defined within the housing unit, an exhaust unit detachably affixed to the exhaust guide member, the exhaust unit being positioned generally rearward of the exhaust guide member, the exhaust unit defining a third exhaust passage communicating with the first and second exhaust passages, the third exhaust passage extending generally normal to an

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axis of the output shaft of the engine, a space is defined below a surface of the engine and above a surface of the exhaust guide member, and at least a portion of the third exhaust passage extending through the space, and at least one catalyzer positioned within the third exhaust passage.